

CLAIMS

What is claimed is:

- 1 1. A display apparatus comprising:
2 a display medium;
3 a transparent substrate;
4 a non-transparent substrate, said display medium being disposed between
5 said transparent substrate and said non-transparent substrate; and
6 an adhesive material coupling said transparent substrate and said non-
7 transparent substrate said adhesive material being disposed
8 proximate to a channel which is in at least one of said transparent
9 substrate and non-transparent substrate.
- 1 2. An apparatus, as in claim 1, wherein said display medium is a liquid crystal
2 material.
- 1 3. An apparatus, as in claim 1, wherein at least one of said transparent
2 substrate and said non-transparent substrate is made, at least in part, with
3 silicon.
- 1 4. An apparatus, as in claim 1, wherein at least one of said transparent
2 substrate and said non-transparent substrate is made, at least in part, with glass.
- 1 5. An apparatus, as in claim 2, wherein at least one of said transparent
2 substrate and said non-transparent substrate is an integrated circuit.
- 1 6. An apparatus, as recited in claim 1, wherein said adhesive material is
2 disposed adjacent to said channel.

- 1 7. An apparatus, as recited in claim 1, wherein a flow of the adhesive
2 material in a direction away from a display area is minimized.
- 1 8. An optical apparatus comprising:
2 a non-transparent substrate;
3 a transparent substrate;
4 a channel, formed in at least one of said transparent substrate and said
5 non-transparent substrate, to receive a flow of adhesive material
6 disposed proximate to said channel;
7 wherein the adhesive material is disposed between said transparent
8 substrate and said non-transparent substrate and couples said
9 transparent substrate and said non-transparent substrate together.
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- 1 9. An apparatus, as in claim 8, wherein at least one of said transparent
2 substrate and said non-transparent substrate is made, at least in part, with
3 silicon.
- 1 10. An apparatus, as recited in claim 8, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with glass.
- 1 11. An apparatus, as recited in claim 8, wherein the adhesive material is
2 disposed adjacent to said channel.
- 1 12. An apparatus, as recited in claim 8, wherein a flow of the adhesive
2 material in a direction away from a display area is minimized.
- 1 13. An apparatus, as in claim 8, further comprising a display medium.

- 1 14. An apparatus, as in claim 13, wherein said display medium is a liquid
2 crystal material.
- 1 15. An apparatus, as in claim 8, further comprising at least a first metal layer
2 and a second metal layer.
- 1 16. An apparatus, as in claim 8, further comprising a passivation dielectric
2 layer.
- 1 17. An apparatus, as in claim 16, further comprising a liquid crystal material
2 wherein said liquid crystal material is disposed between said transparent
3 substrate and said non-transparent substrate.
- 1 18. An apparatus, as recited in claim 17, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with glass.
- 1 19. An apparatus, as in claim 18, wherein at least one of said transparent
2 substrate and said non-transparent substrate has a conductive layer coupled
3 therewith.
- 1 20. An apparatus, as in claim 19, further comprising a conductive crossover
2 material wherein said conductive crossover material is disposed between said
3 conductive layer and at least one of said first metal layer and said second metal
4 layer.
- 1 21. An apparatus, as in claim 20, further comprising at least one bond pad
2 coupled with at least one of said first metal layer and said second metal layer.
- 1 22. An optical apparatus comprising:

2 a non-transparent substrate;
3 a transparent substrate;
4 an adhesive material disposed on at least one of said transparent
5 substrate and said non-transparent substrate; and
6 a channel, formed in at least one of said transparent substrate and said
7 non-transparent substrate, to receive a flow of said adhesive
8 material.

1 23. An apparatus, as recited in claim 22, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with silicon.

1 24. An apparatus, as recited in claim 22, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with glass.

1 25. An apparatus, as recited in claim 22, wherein said adhesive material is
2 disposed adjacent to said channel.

1 26. An apparatus, as recited in claim 22, wherein a flow of said adhesive
2 material in a direction away from a display area is minimized.

1 27. An apparatus, as in claim 22, further comprising a display medium.

1 28. An apparatus, as in claim 26, wherein said display medium is a liquid
2 crystal material.

1 29. An apparatus, as in claim 22, further comprising at least a first metal layer
2 and a second metal layer.

- 1 30. An apparatus, as in claim 29, further comprising a passivation dielectric
2 layer.
- 1 31. An apparatus, as in claim 30, further comprising a display medium.
- 1 32. An apparatus, as in claim 31, further comprising a liquid crystal material.
- 1 33. An apparatus, as in claim 32, wherein at least one of said transparent
2 substrate and said non-transparent substrate having a conductive layer coupled
3 therewith.
- 1 34. An apparatus, as in claim 33, further comprising a conductive crossover
2 material wherein said conductive crossover material is disposed between said
3 conductive layer and at least one of said first metal layer and said second metal
4 layer.
- 1 35. An apparatus, as in claim 34, further comprising at least one bond pad
2 coupled with at least one of said first metal layer and said second metal layer.
- 1 36. A semiconductor method comprising:
2 applying a channel resist mask to at least one of a transparent substrate
3 and a non-transparent substrate; and
4 applying a dielectric-etch to form a channel, in at least one of the
5 transparent substrate and the non-transparent substrate, to receive
6 a flow of adhesive material.
- 1 37. A method, as in claim 36, wherein the dielectric-etch is fluorine based.
- 1 38. A method, as in claim 36, wherein at least one of the transparent substrate
2 and the non-transparent substrate is made, at least in part, with silicon.

- 1 39. A method, as in claim 36, wherein said method further comprises
2 depositing passivation dielectric onto at least one of the transparent substrate
3 and the non-transparent substrate.
- 1 40. A method, as in claim 36, wherein said method further comprises removing
2 the channel resist mask.
- 1 41. A method, as in claim 40, further comprising applying a pad resist mask.
- 1 42. A method, as in claim 41, further comprising applying a dielectric-etch.
- 1 43. A method, as in claim 42, wherein the dielectric-etch is fluorine based.
- 1 44. A method, as in claim 36, wherein said method further comprises applying
2 a metal mask.
- 1 45. A method, as in claim 44, wherein said method further comprises applying
2 a metal-etch.
- 1 46. A method, as in claim 45, wherein the metal etch is chlorine based.
- 1 47. A method, as in claim 36, wherein said method further comprises
2 dispensing the adhesive material along the channel.
- 1 48. A method, as in claim 47, wherein said method further comprises
2 depositing a liquid crystal (LC) material on at least one of the transparent
3 substrate and the non-transparent substrate, within an area bounded by the
4 channel.

1 49. A method, as in claim 48, wherein said method further comprises applying
2 a conductive crossover material to at least one location on at least one of the
3 transparent substrate and the non-transparent substrate.

1 50. A method, as in claim 49, wherein said method further comprises coupling
2 a conductive layer to at least one of the transparent substrate and the non-
3 transparent substrate and wherein the LC material and the conductive crossover
4 material is contained between the transparent substrate and the non-transparent
5 substrate.

1 51. A semiconductor method comprising:
2 applying a channel resist mask to at least one of a transparent substrate
3 and a non-transparent substrate;
4 applying a dielectric-etch to form a channel in at least one of the
5 transparent substrate and the non-transparent substrate; and
6 dispensing adhesive material proximate to the channel.

1 52. A method, as in claim 51, wherein the dielectric-etch is fluorine based.

1 53. A method, as in claim 51, wherein at least one of the transparent substrate
2 and the non-transparent substrate is made, at least in part, with silicon.

1 54. A method, as in claim 51, wherein said method further comprises
2 depositing passivation dielectric onto at least one of the transparent substrate
3 and the non-transparent substrate.

1 55. A method, as in claim 51, wherein said method further comprises removing
2 the channel resist mask.

- 1 56. A method, as in claim 55, wherein said method further comprises
2 depositing a passivation dielectric onto at least one of the transparent substrate
3 and the non-transparent substrate.
- 1 57. A method, as in claim 56, wherein said method further comprises applying
2 a pad resist mask.
- 1 58. A method, as in claim 53, wherein said method further comprises applying
2 a metal mask.
- 1 59. A method, as in claim 58, wherein said method further comprises applying
2 a metal-etch.
- 1 60. A method, as in claim 59, wherein the metal-etch is chlorine based.
- 1 61. A method, as in claim 51, wherein said method further comprises
2 depositing a liquid crystal (LC) material on at least one of the transparent
3 substrate and the non-transparent substrate, within an area bounded by the
4 channel.
- 1 62. A method, as in claim 61, wherein said method further comprises applying
2 a conductive crossover material to at least one location on at least one of the
3 transparent substrate and the non-transparent substrate.
- 1 63. A method, as in claim 62, wherein said method further comprises coupling
2 a conductive layer coupled to at least one of the transparent substrate and the
3 non-transparent substrate and wherein the LC material and the conductive
4 crossover material is contained between the transparent substrate and the non-
5 transparent substrate.

1 64. An optical apparatus comprising:
2 means for applying a channel resist mask to a substrate; and
3 means for applying a dielectric-etch to form a channel, in the substrate, to
4 receive a flow of adhesive material.

1 65. An optical apparatus comprising:
2 means for applying a channel resist mask to a substrate;
3 means for applying a dielectric-etch to form a channel in the substrate; and
4 means for dispensing adhesive material proximate to the channel.

1 66. An optical apparatus comprising:
2 a non-transparent substrate;
3 a transparent substrate;
4 a channel, formed in at least one of said transparent substrate and said
5 non-transparent substrate, to receive a flow of adhesive material
6 disposed adjacent to said channel;
7 wherein the adhesive material is disposed between said transparent
8 substrate and said non-transparent substrate and couples said
9 transparent substrate and said non-transparent substrate together.

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1 67. An apparatus, as in claim 66, wherein at least one of said transparent
2 substrate and said non-transparent substrate is made, at least in part, with
3 silicon.

1 68. An apparatus, as recited in claim 66, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with glass.

- 1 69. An apparatus, as recited in claim 66, wherein the adhesive material is
2 disposed adjacent to said channel.
- 1 70. An apparatus, as recited in claim 66, wherein a flow of the adhesive
2 material in a direction away from a display area is minimized.
- 1 71. An apparatus, as in claim 66, further comprising a display medium.
- 1 72. An apparatus, as in claim 71, wherein said display medium is a liquid
2 crystal material.
- 1 73. An apparatus, as in claim 66, further comprising at least a first metal layer
2 and a second metal layer.
- 1 74. An apparatus, as in claim 66, further comprising a passivation dielectric
2 layer.
- 1 75. An apparatus, as in claim 71, further comprising a liquid crystal material
2 wherein said liquid crystal material is disposed between said transparent
3 substrate and said non-transparent substrate.
- 1 76. An apparatus, as recited in claim 75, wherein at least one of said
2 transparent substrate and said non-transparent substrate is made, at least in part,
3 with glass.
- 1 77. An apparatus, as in claim 76, wherein at least one of said transparent
2 substrate and said non-transparent substrate has a conductive layer coupled
3 therewith.
- 1 78. An apparatus, as in claim 77, further comprising a conductive crossover
2 material wherein said conductive crossover material is disposed between said

3 conductive layer and at least one of said first metal layer and said second metal
 4 layer.

1 79. An apparatus, as in claim 78, further comprising at least one bond pad
 2 coupled with at least one of said first metal layer and said second metal layer.

1 80. A semiconductor method comprising:
 2 applying a channel resist mask to at least one of a transparent substrate
 3 and a non-transparent substrate; and
 4 applying a dielectric-etch to form a channel, in at least one of the
 5 transparent substrate and the non-transparent substrate, to receive
 6 a flow of adhesive material disposed adjacent to the channel.

1 81. A method, as in claim 80, wherein the dielectric-etch is fluorine based.

1 82. A method, as in claim 80, wherein at least one of the transparent substrate
 2 and the non-transparent substrate is made, at least in part, with silicon.

1 83. A method, as in claim 80, wherein said method further comprises
 2 depositing passivation dielectric onto at least one of the transparent substrate
 3 and the non-transparent substrate.

1 84. A method, as in claim 80, wherein said method further comprises removing
 2 the channel resist mask.

1 85. A method, as in claim 84, further comprising applying a pad resist mask.

1 86. A method, as in claim 85, further comprising applying a dielectric-etch.

1 87. A method, as in claim 86, wherein the dielectric-etch is fluorine based.

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1 88. A method, as in claim 80, wherein said method further comprises applying
2 a metal mask.

1 89. A method, as in claim 88, wherein said method further comprises applying
2 a metal-etch.

1 90. A method, as in claim 89, wherein the metal etch is chlorine based.

1 91. A method, as in claim 80, wherein said method further comprises
2 dispensing the adhesive material along the channel.

1 92. A method, as in claim 91, wherein said method further comprises
2 depositing a liquid crystal (LC) material on at least one of the transparent
3 substrate and the non-transparent substrate, within an area bounded by the
4 channel.

1 93. A method, as in claim 92, wherein said method further comprises applying
2 a conductive crossover material to at least one location on at least one of the
3 transparent substrate and the non-transparent substrate.

1 94. A method, as in claim 93, wherein said method further comprises coupling
2 a conductive layer to at least one of the transparent substrate and the non-
3 transparent substrate and wherein the LC material and the conductive crossover
4 material is contained between the transparent substrate and the non-transparent
5 substrate.